Upper Sand Creek Basin
Contra Costa County Flood Control and Water Conservation District
Monitoring, Assessment and Performance Measures

The primary purpose of the Upper Sand Creek Basin (USCB) is to prevent flooding along the lower reach of Marsh Creek between Sand Creek in Brentwood and the Marsh Creek confluence into the Sacramento-San Joaquin River at Big Break in Oakley. The regional goal for USCB is to significantly reduce peak flows from Sand Creek into Marsh Creek. Local stormwater runoff and stormwater generated in the watershed will be conveyed by Sand Creek to the basin where it will be stored and released slowly through the basin outlet, reducing peak flows downstream and reducing the potential for flooding downstream properties. Secondary purposes of USCB include habitat restoration and water quality enhancements.

Metrics Used to Evaluate Project Performance

The main metrics that will be used to assess project performance are improved flood control and reduction of the 100-year, 6-hour floodwater levels over nine miles of Sand and Marsh Creek. In addition, the 100-year flow rate at the outlet of the USCB is expected to be reduced to 131 cubic feet per second, maximum.

Monitoring Systems

The Contra Costa County Flood Control and Water Conservation District (District) has a stream gage station on Marsh Creek downstream of USCB that reports maximum stage and flow rate for each storm event. Flow levels in Marsh Creek should be lower after construction of USCB.

Data Collection and Evaluation Process

The District maintains an ongoing data collection system on Marsh Creek. The data collection system is located upstream of a drop structure, in Marsh Creek, between Delta Road and Sunset Road.

The flow through the primary spillway of USCB is controlled by a removable metal orifice plate. If, after construction, the District determines that the flow rates in Sand and Marsh Creeks need to be adjusted to change performance, this plate can easily be adjusted or modified.

Construction of USCB will be followed by the construction Lower Sand Creek Basin, which will occur a few years following the USCB project. Issues that cannot be resolved by USCB, such as stormwater generated downstream of the Project, will be addressed by the Lower Sand Creek Basin design.

Consistency with Basin Plan

This project will eliminate flooding in an urbanized area and subsequent introduction of polluted flood waters into the Delta, potentially reducing loading of bacteria, biostimulatory substances, chemical constituents, floating material, mercury, oil and grease, pesticides, salinity, sediment, settleable material, suspended material, and taste-and-odor-causing compounds. In addition, pollution from floodwaters could cause pH impacts and contribute to increased temperature, turbidity, color and toxicity and decreased dissolved oxygen. As a result, this project is consistent with the Region 5 Basin Plan.

Contra Costa County Flood Control & Water Conservation District

Project Performance Measures Table: Upper Sand Creek Basin Project

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Restore Habitat	Ensure high value habitat in restored areas	Wetland Habitat Created	Degraded Areas Restored to Wetlands	Measure Acreage of Wetlands Created	Create 0.47 acres of permanent wetland, 2.18 acres of seasonal wetland and 0.6 acres of riparian woodland/ scrub
Improve Water Quality	Improved Quality of Stormwater Passing Through USCB	Cleaner Water Discharged from USCB	Amount of Pollutants Removed by USCB	Measure Pounds of Floatable Trash Removed	100 pounds of trash removed a year
Reduce Flood Risk	Enhanced levels of flood protection	Reduction in the number of flood events that overtop bank downstream	Interval of flood events that overtop bank downstream	Track ability to withstand storms without overtopping	Measurable reduction in flood events downstream of site
Open Space Preservation	Preserve Open Space	Increased Number of Protected Acres	Acres Protected	Post Project Right of Way Measurement	Put 62.5 acres into public ownership

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